

# CASE STUDY

In-Store Advertising in Retail



## Redefining the Retail Experience with Intelligent In-Store Communication

Winter Mushroom leverages the Intel® Distribution of OpenVINO™ toolkit to enable a smarter, personalized customer engagement and interaction experience



“ Partnering with Intel on the OpenVINO™ toolkit and switching to Intel® Neural Compute stick 2 as our architecture was the best technical move we did since the company's inception, for it helped us scale and save money at the same time. ”

**Grégoire Audibert**  
CEO, Winter Mushroom

Retailers lose money when customers walk out of a retail store without making a purchase or with a basket value that is significantly lower than the average basket value. To address this challenge, retailers are moving toward smart display solutions that help brands communicate effectively with customers through personalized messages.

The DOOH (Digital Out of Home) industry was valued at over \$18.6 bn in 2019 and is set to reach \$39.54 bn by 2027, growing exponentially at a rate of 11.02% from 2020-2027.<sup>1</sup> AI integrated digital signage solutions are now offering new and better opportunities and experiences for both retailers and consumers.

Although the retail audience analysis market, based on facial classification technology, is quite pervasive, implementing highly customizable solutions can be expensive and time consuming. This is a problem area, for both smaller brands that may not have the funds to launch a huge integration project and bigger brands that may find it difficult to keep up with the pace of change due to pre-defined IT infrastructure roadmaps.

### Making In-Store Advertising More Relevant

Winter Mushroom leverages Intel® architecture to deliver a smart digital signage solution that displays dynamic advertisements and intelligent, personalized real-time communication based on live customer demographic. The solution ensures that the right message is delivered to the right person at the right time with the help of customer profiling (age and gender) and context data (ongoing promotions, weather etc.)

### Delivering Real-Time Customer Insights

The Winter Mushroom digital signage solution enables retailers to display highly personalized advertisements using a simple plug and play model. It uses facial classification, machine vision technology and deep learning algorithms to generate real-time insights about the audience in the store and display offers and products most relevant to the audience. To ensure maximum impact, the solution focuses on three primary factors:

- **Personalization** – Displaying tailor-made ads that appeal to consumers and greatly enhance the probability of sale. The solution empowers retailers to personalize messaging based on parameters like age and gender.
- **Analytics:** Insights derived from analytics that can be used to improve future campaigns and recommendations. The solution enables retailers to measure campaign impact and their store's performance.
- **Location:** Location is a fundamental element of OOH ads. The solution allows retailers to serve ads that compliment and interact with their environment to create maximum impact.

## Enabling Smart, Intelligent Features

With its AI-enabled capabilities, the Winter Mushroom digital signage solution offers several intelligent features that make it easier to deliver engaging shopping experiences:

**Smart Ads** – The digital signage system enables retailers to drive relevant ads based on the consumer demographic and the retailer's goals.

- Targeted Ads to boost the sale of specific products
- Automatic Ad creation with the Winter Mushroom API using pre-customized templates to save time

**Smart Coupons** – Easy dispensing of coupons directly to a customer's smartphone using NFC technology or QR code

**Opti-Stock** – Smart stock management feature to sell items faster and optimize orders

**Analytical Insights** – Data driven insights to help retailers measure performance and impact

- Shop attendance tracked by gender and age
- Consumer attention time for ads
- Number of ad views and conversion rate for real-time feedback on campaigns

**Autonomous Administration** – User-friendly admin interface for easy updating of campaigns and access to multiple account options

The solution helps brands focus their marketing and messaging on products that are immediately available to customers. As the solution only collects non-personal data, it enables stores to display personalized advertisements without infringing on customer privacy and data security.

## Creating Personalized Experiences with Intel® Technologies

Winter Mushroom uses two different deep learning models in their solution for face detection and face classification. Winter Mushroom tried using an online GPU server to expedite classification and achieve real-time results. But the LAN time in this scenario was much longer than the inference time. If 3 people passed by at the same time, the detection time was close to 1 second which was not good enough for real time analysis.

Winter Mushroom was able to address this challenge by using the Intel® Neural Compute Stick 2 and the Intel Distribution of OpenVINO toolkit to optimize their model for the inference engine. The inference was moved from the online server back to their devices. The inferencing was done using the MobileNetV2 model which is compatible with the Intel Neural Compute Stick 2. This helped solve the lag issues and enabled the digital signage solution to rapidly personalize and display relevant advertisements based on insights generated by the deep learning algorithms. Leveraging the Intel® Movidius™ VPUs, Intel® Core™ processors and the OpenVINO toolkit, Winter Mushroom was able to deliver a fast and cost efficient digital signage solution that does not need an external server for inference.

## Enabling a Customer Centric Retail Experience

By using Winter Mushroom's digital signage solution based on Intel architecture, retailers can streamline operations through accelerated and expanded insight into consumer buying patterns. With optimized models and low turn-around time, retailers can get more value from their data while reducing time to market for intelligent solutions.

### About the Intel® Distribution of OpenVINO™ Toolkit

The Intel® Distribution of OpenVINO™ toolkit, an open visual inference and neural network optimization toolkit, is free software that helps developers and data scientists speed up computer vision workloads, streamline deep learning inference and deployments, and enable easy, heterogeneous execution across Intel's platforms - from edge to cloud.

For more information about the Intel Distribution of OpenVINO toolkit, visit: [intel.com/openvino](https://intel.com/openvino).

Download OpenVINO toolkit



#### Notices and Disclaimers

Intel technologies may require enabled hardware, software or service activation.

No product or component can be absolutely secure.

Your costs and results may vary.

Intel does not control or audit third-party data. You should consult other sources to evaluate accuracy.

<sup>1</sup>Source: <https://www.verifiedmarketresearch.com/product/global-digital-out-of-home-market/#:~:text=Digital%20Out%20of%20Home%20Market%20was%20valued%20at%20USD%2018.>

© Intel Corporation. Intel, the Intel logo, and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others